

CLAIMS

1. Device (1) for protecting an injection apparatus (4) for injecting a product, particularly a syringe,
5 the said apparatus comprising a reservoir (32) fitted with a needle (7) at its distal end and a piston connected to an actuating rod surmounted by a piston head (19), the said device (1) comprising:
 - a support sleeve (2) comprising a body (3) able to accommodate the injection apparatus (4) and a proximal end part (5),
 - a protective sleeve (6) able to slide with respect to the support sleeve (2) between a retracted standby configuration in which the needle (7) is exposed and a deployed protective configuration in which it covers the needle (7),
 - the said device being characterized in that it comprises:
 - first retaining means (8, 10, 12, 13) for holding the protective sleeve (6) in its standby configuration in a first position, known as the injection position,
 - second retaining means (8, 14-17) for holding the protective sleeve (6) in its standby configuration in a second position, known as the end-of-injection position, which is appreciably offset in the distal direction with respect to the support sleeve (2),
 - an intermediate collar (18) situated in the proximal end part (5) of the support sleeve (2), able 30 to slide with respect to this support sleeve (2) within the said proximal end part (5), the said collar (18) comprising means (20) of collaboration with the piston head (19) of the injection apparatus (4), and means (23-25) of deactivating the said first and second retaining means (8, 10, 12-17),
 - the said first retaining means (8, 10, 12, 13) being able to be deactivated by the said deactivation means (23-25) of the said intermediate collar (18) by pressure of the piston head (19) in the distal

direction on the said means (20) of collaboration of the said intermediate collar (18) so as to cause the protective sleeve (6) to slide in its retracted standby configuration between the said first injection position 5 and the said second end-of-injection position,

- and the said second retaining means (8, 14-17) being able to be deactivated by the deactivation means 10 (20) of the said intermediate collar (18) by release of the pressure of the piston head (19) on the said collaboration means (20) of the said intermediate collar (18) so as to allow the protective sleeve (6) to deploy under the action of pushing means (26).

2. Device (1) according to Claim 1, characterized in 15 that the means (20) of collaboration of the intermediate collar (18) with the piston head (19) comprise two diametrically opposed legs (20) running in the proximal direction, slightly offset from the body 20 (21) of the collar (18) in the radial direction and connected to the proximal end of the collar (18) by radial bridges (22).

3. Device (1) according to Claim 1 or 2, characterized in that the first retaining means (8, 10, 25 12, 13) comprise two diametrically opposed longitudinal bulges (8) formed on the internal surface (9) of the wall of the body (3) of the support sleeve (2), each bulge (8) at its proximal end comprising an internal retaining ramp (12) and two first tabs (10) running 30 axially in the proximal direction from the proximal end (11) of the protective sleeve (6), each of the said first tabs (10) being provided at its proximal end with a projection (13) the distal face of which is inclined and able to rest on the internal ramp (12) of the 35 proximal end of one said bulge (8).

4. Device (1) according to Claim 3, characterized in that the second retaining means (8, 14-17) comprise a transverse retaining surface (14) situated at the

proximal end of each bulge (8) facing the internal ramp (2) of the said bulge (8) and two second tabs (15) running in the proximal direction from the proximal end of the protective sleeve (6) along an axis slightly
5 inclined with respect to the longitudinal axis of the injection apparatus (4), each second tab (15) being situated facing one said first tab (10), each second tab (15) being equipped at its proximal end with a hooked portion (16) the distal face (17) of which is
10 able to rest against the transverse retaining surface (14) of the bulge (8) facing it.

5. Device (1) according to Claim 4, characterized in that the deactivation means (23-25) for deactivating
15 the first and second retaining means (8, 10, 12-17) are in the form of a surface (23) projecting radially from the body (21) of the collar (18), the said surface (23) being able to collaborate with the said first tabs (10) and with the said second tabs (15) to deflect them
20 circumferentially.

6. Device (1) according to any one of the preceding claims, characterized in that the pushing means (26) are in the form of a spring (26) the proximal end of
25 which bears against the distal end (27) of the intermediate collar (18) and the distal end of which bears against an annular rim (28) formed on the internal surface of the protective sleeve (6) at its proximal end.